

BOOSTING UP JSL LEARNERS' OUTSIDE-CLASS LEARNING TIME WITH LEARNING LOG SYSTEM

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ABSTRACT

This paper tackles enhancing outside-class learning of JSL (Japanese as a Second Language) learners. The objective of this study is to examine the effectiveness of our developed learning log system called SCROLL (System for Capturing and Reminding Of Learning Log) in terms of boosting up outside-class learning time of JSL learners in Japan. In our evaluation, there was a statistically significant increase of outside-class learning time during the phase with SCROLL. However the number of uploading words did not contribute to boosting up outside-class learning time but it seemed taking quizzes that contributed to the increase. The questionnaire survey shows that no advanced learners gave positive comments about SCROLL, while there was only one negative comment from the beginners. It implies that the system might more fit beginner learners.

KEYWORDS

JSL (Japanese as a Second Language), learning log system, mobile language learning, outside-class learning time

1. INTRODUCTION

According to Japan Student Services Organization (JASSO), as of May 1, 2013, 135,519 international students are now studying in Japan. Learning Japanese is a necessity for them. Besides, Japanese Government put forward a "Plan for 300,000 Exchange Students" as a policy measure to create A Japan that is Open to the World in 2008. Since then, Japanese language education for international students has become an emergent issue. But learning a new language is a time consuming process as the Foreign Service Institute (FSI) of the US Department of State has pointed out. According to their investigation, 2,200 hours is necessary for English speakers to achieve general professional proficiency level of Japanese language.

A questionnaire was conducted to examine how many Japanese language classes per week international students are taking at university in Japan (46 participants). The result shows that the average number of Japanese language class was 1.3 class per week (SD: 2.49). Lack of in-class learning time is obvious. If it is not possible to increase in-class learning time, the only choice left is to boost up students' outside-class learning time.

What could be a real contributor to boosting up outside-class learning time? In order to find the answer, we explored effectiveness of Learning Log System called SCROLL. The objective of this study is to find out an answer to our hypothetical question; whether SCROLL could be a contributor to boosting up outclass learning time for JSL learners in Japan.

2. BACKGROUNDS

2.1 Boosting Up Outside Class Learning

It takes a substantial amount of time to master a new language, but time spent in-class is far from sufficient. However, there are very few studies in which they challenged to boost up outside-class learning. Shirono

(2009) reported that by letting their students keep their learning reports and submit them to their teacher, it helped them get more committed to outside-class learning. Tan (2012) explored the pedagogy of blended language learning to promote learner autonomy. But no research studies were found where they challenged it with mobile and web language learning application even though there are countless tools at present.

2.2 Mobile Learning Environment

Mobile learning has generally been defined as learning with its use of mobile and wireless technologies. It is often depicted as “learning anytime anywhere”. It has been recognized as one of the natural directions toward which CALL (Computer Assisted Language Learning) is heading (Chinnery, 2006; Stockwell, 2007). Thornton & Houser (2005) reported that the learners preferred mobile platform rather than PCs. We believe its mobility aspect will be able to contribute to boosting up outside class learning.

3. SCROLL

Learning takes place in variety of situations. How can we record our learning experiences? Taking notes is a traditional way. When we come across new vocabularies, we may take notes. However, the notes will not remind us of what we have learned. SCROLL has been developed in order to support learners to record new information, to remind them, to share and reuse them in future learning. The system is designed to support every aspect of a learner’s activity model called LORE (Log-Organize-Recall-Evaluate) (Ogata et al. 2011).

3.1 Design of the System

In this paper, we define the term, ubiquitous learning log (ULL) as record of what a learner has learned in the daily life using ubiquitous technologies. Each recorded object is called ubiquitous learning log object (ULLO). SCROLL is a client-server application. The server side runs on Linux OS. It runs on different platforms such as smart phones, tablets, and PCs. SCROLL interfaces that support the learners to record, share and reuse ULLOs with smartphones are as follows.

3.1.1 ULLO Recorder (Log)

This component facilitates the way learners upload their ULLOs to the server whenever and wherever they learn. In order to add a ULLO, a learner can take a photo, ask questions about it and attach different kinds of meta-data with it. Figure 1(1) shows the android interface of adding a ULLO.

3.1.2 ULLO Finder (Organize)

If a learner registers a new ULLO, the system checks whether the same object has been already stored or not. Also, the learner can search ULLOs by name, location, text tag and time. Using this function, a learner can understand what, where and when he learned before. Besides, it allows him to be aware of others’ learning objects and to relog them if he regards it as useful. This means that he can make a copy of another learner’s learning object into his own log. Therefore, learners can obtain a considerable amount of knowledge from others even though they have not experienced that knowledge themselves. By sharing ULLOs with others and relogging other learners’ ULLOs, the acquisition of knowledge is enhanced.

3.1.3 ULLO Reminder (Recall)

Figure 1(2) shows multiple-choice quizzes generated automatically by the system. The system immediately checks whether the answer is correct or not. These quizzes are generated according to the learner’s profile, location, time and the results of past quizzes. The quiz function is designed not only to help learners to reinforce what they have learned, but also to recommend other learners’ ULLOs according to their current location in their preferred time.



Figure 1. SCROLL Interface of Android mobile phone



Figure 2. SCROLL TimeMap

3.1.4 ULLO Review and Evaluation (Evaluate)

The system shows the users TimeMap (cf. Figure 2). They can evaluate and review when and where they learn their logs. They can also review how actively they use the system and how many correct and wrong answers they give by looking at the dashboard on top page and Quiz Logs.

4. EVALUATION

Seventeen international students (3 German, 2 Chinese, 2 Taiwanese, 2 Thais, 1 American, 1 Canadian, 1 Brazilian, 1 Danish, 1 Korean, 1 Vietnamese, 1 Spanish, 1 Hong Kongese) of CALL class which was held weekly at Osaka University participated in the evaluation. They all reported they had Internet-connected PCs at home and were mobile phone owners.

The evaluation was carried out over 6 weeks. Each participant experienced each of the two outside-class learning modes 1) without SCROLL for the first 3 weeks (Phase 1) and 2) with SCROLL for the second 3 weeks (Phase 2). Therefore the only parameter for comparison was WITH and WITHOUT SCROLL. Other conditions remained the same. Since our main objective is to examine SCROLL contribution in terms of boosting up outside-class learning time, the participants were asked to report their outside-class learning time to the teacher every class. Time aspect was emphasized because as mentioned, outside-class learning time is pivotal to learn a foreign language. On the day that Phase 2 started, they created an account of SCROLL and received a briefing about how to use the system such as how to upload newly learned words, how to take quizzes, how to practice pronunciation, how to review their past logs, and how to relog other users' logs during the class. They were encouraged to use the system outside-class for their target language learning.

4.1 Results and Discussions

Table 1 shows the outside-class learning time for the target language learning during Phase 1 and Phase 2, its difference (Phase 2 – Phase 1), the number of SCROLL uploads, times of quiz taking and the number of correct answers of quizzes. The average learning time was 8.3 hours during Phase 1 and 12.2 hours during Phase 2 per week. It shows the statistically significant increase ($t = 3.20, p = 0.00028$). Totally 435 learning logs (Mean = 25.6/person Max. = 107 Min. = 2) were uploaded to the system. There were no relogged objects. We examined correlation between each student's number of uploads and learning time increase (Phase 2 – Phase 1). The correlation coefficient between the two factors was -0.12. No statistically significant correlation was detected.

Table 1. Outside-class learning time (per week), SCROLL uploads, and Quizzes

Student	Phase 1 Without SCROLL (hrs)	Phase 2 With SCROLL (hrs)	Phase 2 – Phase 1	Number of SCROLL uploads during Phase 2	Times of quiz taking during Phase 2	Number of correct answers during Phase 2
#1	20.5	35	14.5	10	63	60
#2	4	18.6	14.6	26	53	49
#3	3.3	4	0.7	11	10	9
#4	5.1	3.7	-1.4	107	48	36
#5	12	15	3	3	7	7
#6	3.9	6.9	3	59	9	8
#7	5.7	10.7	5	11	8	5
#8	3	6.7	3.7	8	24	23
#9	5	11.7	6.7	10	37	31
#10	14	12	-2	24	0	0
#11	5.6	8	2.4	10	20	12
#12	15.7	12.2	-3.5	29	43	41
#13	17.3	24	6.7	107	32	25
#14	7.5	15	7.5	2	0	0
#15	7.5	10	2.5	3	22	21
#16	2	2	0	2	0	0
#17	9	12	3	13	13	9
Mean (SD)	8.3 (5.41)	12.2 (7.83)	3.9 (4.90)	25.6 (32.67)	22.9 (19.32)	19.8 (17.71)
t-value	3.20 ($p=0.00028$)		r (correlation)	-0.12	0.45	0.49

The average times of quiz-taking was 22.9 times (SD = 19.32 Max. = 63 Min. = 0). We examined correlation between each student's times of quiz-taking and time increase (Phase 2 – Phase 1). The coefficient of correlation between the two was 0.45. Statistically significant correlation was detected as the following formula indicates: $r^2 = 0.2113 > 0.2105 \{4/(n+2)\}$

The average number of correct answers was 19.8 times (SD = 17.71 Max.= 60 Min.= 0). We examined correlation between each student's times of quiz-taking and time increase (Phase 2 – Phase 1). The coefficient of correlation between the two was 0.49. More statistically significant correlation was detected as the following formula indicates: $r^2 = 0.2416 > 0.2105 \{4/(n+2)\}$

Outside-class learning time significantly increased in Phase 2. Therefore the use of SCROLL could be one of the contributors to the students' more involvement in outside-class learning. However the number of uploading words did not contribute to boosting up learning time. It was found that taking quizzes could be one of the contributors. Table 1 shows that it was significantly correlated between learning time and times of giving right answers to the quizzes. Why did they enjoy the quiz but not the uploading activity? In our previous study, SCROLL group uploaded less words but learned more words than the control group (Uosaki et al. 2012). It took more time to upload new words than taking notes. Unlike uploading, quiz taking is an easy operation. In fact, our previous studies show that the subjects gave good impressions on the quiz function (Li et al., 2013; Uosaki et al. 2013). Therefore taking quizzes might have triggered their outside-class learning.

Student # 14 showed 7.5 hour increase, even though he did not seem to use the system a lot. A personal inquiry was made about his outside class learning activities and it was found out that he in fact used the system quite often and viewed other learners' logs, which, we believe might be one of the reasons why his outside-class learning time increased during Phase 2.

Table 2. What is your impression of using SCROLL?

Student	level	comments
#1	advanced	It's a great idea, and it's set up well, but it seems underdeveloped. It also relies on the accuracy of the words posted by contributors, which can be risky
#2	advanced	time consuming and when the network is not stable it is so difficult to use
#3	advanced	none
#4	beginner	none
#5	advanced	It takes time to get used to it.
#6	advanced	It has interesting features, like attaching pictures and/or sharing your location when uploading a new card. The translator gets most of the words correctly, but sometimes fail to translate longer expressions.
#7	beginner	good
#8	intermediate	It seems very useful for learning foreign language
#9	intermediate	its good
#10	intermediate	It is a nice system but I don't think that it is very useful for me personally.
#11	beginner	I can see and study from my friend activities.
#12	advanced	I think it's a very nice idea to learn vocabulary with the opportunity to include pictures. It's way easier to learn them. But on the other side it's complicated to input pictures which should show verbs.
#13	intermediate	I don't find it really useful.
#14	beginner	none
#15	intermediate	Doesn't seem all that great, there are much more professional websites for learning languages
#16	beginner	interesting
#17	beginner	very unorganized, not very polished

A questionnaire survey was conducted to ask their impression of using SCROLL (cf. Table 2). Five gave positive comments, 5 gave negative ones, and 4 gave both positive and negative ones. No advanced learners

gave positive comments, while there was only one negative comment from the beginners. It implies the more they get advanced, they are likely to get unsatisfied. It suggests that the system might more fit beginner learners.

5. CONCLUSION AND FUTURE WORKS

This paper explicated our research study using SCROLL for boosting up JSL learners' outside-class learning time. The result of the evaluation showed that there was a statistically significant increase of outside-class learning time during the phase with SCROLL. The correlation coefficient value implies that it was taking quizzes that contributed to the increase. The user comments imply that the system might more fit beginner learners. Since more than half of the participants had negative comments, SCROLL is needed to be more sophisticated. As our future work, we are going to introduce game elements in our system. We expect that such game elements will be able to add some fun factor so that they can enjoy and get more involved in learning outside-class. We believe it will be one of strong contributors to boost up outside-class learning time.

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